JD600
TRACTOR
(SERIAL NO. 91000-UP)

JOHN DEERE

OPERATORS MANUAL

JD600 TRACTOR
(SERIAL NO. 91000-UP)

OMR39670 H5 English

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LITHO IN THE U.S.A.
ENGLISH

TO THE PURCHASER

Your new John Deere JD600 Tractor is an entirely new concept of power. Built to the traditionally high standards of John Deere, this versatile tractor meets today's exacting requirements.

Outstanding ease of operation, the ability to match engine power and speed to the job, operating comfort, hydraulic power when and where you need it, simplicity of lubrication and service, modern styling, and economical, dependable service are all features of this great tractor.

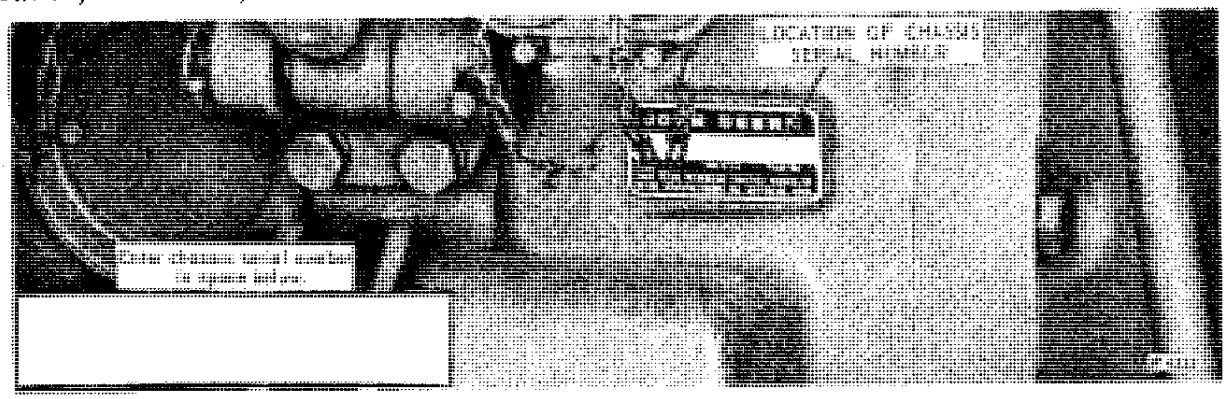
At the time the tractor was delivered, the John Deere dealer discussed with you its safe operation and proper care. However, before putting the tractor to work, read this manual. It contains complete instructions for operating the tractor, caring for it, and taking advantage of its many time- and labor-saving features. After reading this manual, keep it in a convenient place together with the tractor parts list and any equipment operator's manual and parts list that are used with the tractor. This will assure you quick and easy reference if questions arise concerning operation, lubrication, or service.

References to the right or left side of the tractor are as viewed from behind the tractor.

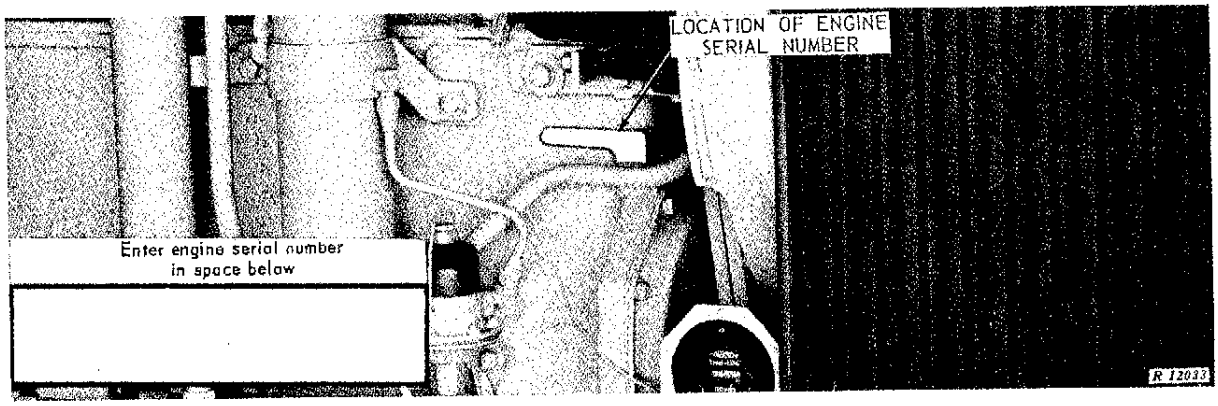
The service policy which you received with your tractor certifies that the tractor was properly inspected and prepared for delivery by your John Deere dealer. Keep this policy in a safe place and present it to the dealer whenever services which it authorizes are required.

Your John Deere dealer wants to help you get the most value from your tractor. His skilled servicemen can handle every job efficiently. These men are trained in modern service methods; they have all necessary tools and equipment. If new parts are needed, only genuine John Deere parts will be installed. These parts are exact duplicates of the originals, made from the same patterns and of the same high-quality materials.

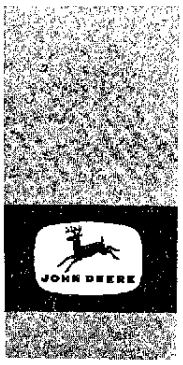
When in need of new parts, be prepared to furnish your dealer with the complete engine serial number, the complete tractor chassis serial number, and the tractor series number. For ready reference, locate and record the serial numbers in the spaces provided in the following illustrations.



Tractor Chassis Serial Number



Engine Serial Number



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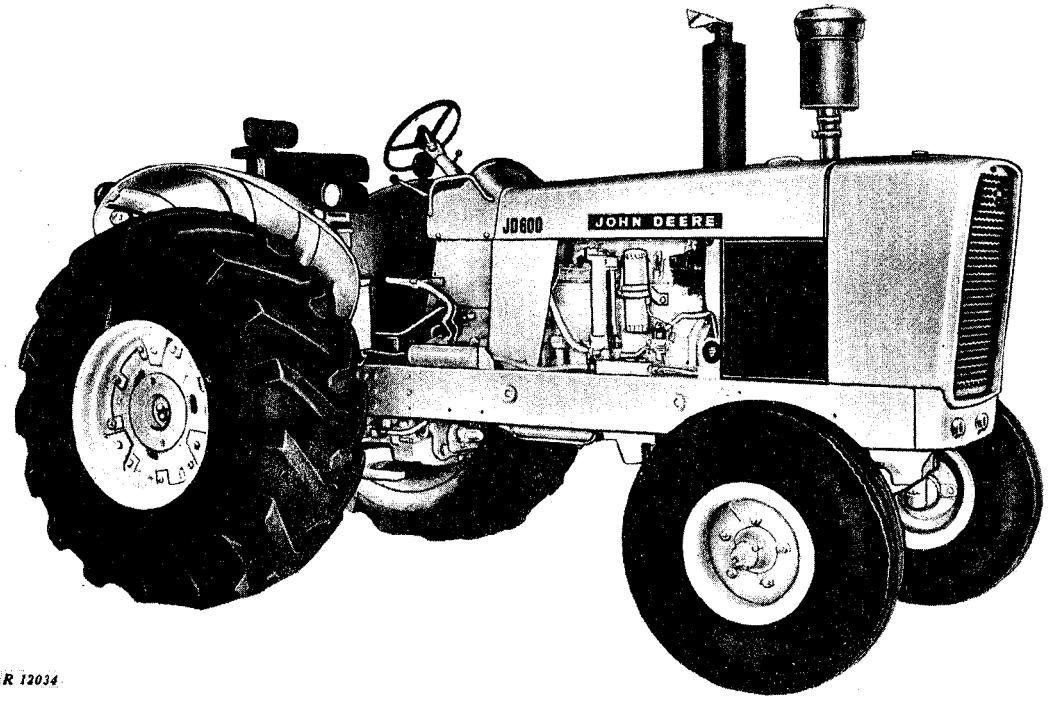
SPECIFICATIONS

	Diesel	Gasoline
HORSEPOWER (at 2200 rpm):		
Net engine flywheel at 500 ft. altitude and 85° F. temperature	101.2 hp.	103.5 hp.
ENGINE:		
Type	6-cylinder, in-line, valve-in-head	
Engine speeds:		
Idle for engine shut-off	. . . . .	420 rpm
Normal slow idle	600 rpm	650 rpm
Working speeds	1500 to 2200 rpm	1500 to 2200 rpm
Maximum transport speed	2500 rpm	2500 rpm
Bore and stroke	4-1/4 in. x 4-3/4 in.	4-1/4 in. x 4 in.
Displacement	404 cu. in.	340 cu. in.
Compression ratio	16.5 to 1	7.6 to 1
Firing order	1-5-3-6-2-4	1-5-3-6-2-4
Intake valve clearance	0.018 in.	0.015 in.
Exhaust valve clearance	0.018 in.	0.028 in.
Injection pump timing	TDC	. . . . .
Distributor timing	. . . . .	20° BTDC at 2000 rpm
Distributor point gap	. . . . .	0.016 in.
Spark plug gap	. . . . .	0.025 in.
ELECTRICAL SYSTEM:		
Starter, alternator voltage	24 volts	12 volts
Lights, accessory voltage	12 volts	12 volts
12-volt battery, 78-plate, 75 ampere-hour	Two (connected in series)	One



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John Deere JD600 Tractor with Diesel Engine and Power Shift Transmission

COOLING SYSTEM:
- Type . . . . . Pressurized with centrifugal pump
- Engine temperature control . . Heavy-duty thermostats

LUBRICATION SYSTEM: . . . . . Force-feed pressurized type with full-flow oil filter

CAPACITIES:
- Cooling system . . . . . 6 U.S. gals.
- Fuel tank . . . . . 34 U.S. gals.
- Engine crankcase . . . . . Dry system - 9 U.S. qts.
  At service intervals - 8 U.S. qts.
- Transmission-hydraulic system:
  - Collar Shift . . . . . Dry system - 13 U.S. gals.
    At service intervals - 10 U.S. gals.
  - Power Shift. . . . . Dry system - 17 U.S. gals.
    At service intervals - 14 U.S. gals.
- Air cleaner, oil-bath . . . . . Gasoline - 2-3/4 U.S. pts.
- Belt pulley . . . . . 2-1/2 U.S. pts.

COLLAR SHIFT TRANSMISSION:
- Type . . . . . Collar shift, constant mesh
- Gear selections . . . . . 8 forward and 2 reverse
- Shifting . . . . . 4 stations, right- or left-hand shifting in each station

POWER SHIFT TRANSMISSION:
- Type . . . . . Planetary gears, hydraulically actuated wet disk clutches and brakes
- Gear selections . . . . . 8 forward and 4 reverse
- Shifting. . . . . Hydraulic powershifting controlled by right-hand speed selector and left-hand reverser lever

GROUND SPEEDS: . . . . . See page 11

POWER TAKE-OFF:
- Type . . . . . Independent PTO with front and rear power take-off. Stub shaft used for rear dual speed PTO conversion.
- Speed (1900 engine rpm) . . . . . Front - 1000 rpm
  Dual speed rear - 540 or 1000 rpm
  Single speed rear - 1000 rpm

HYDRAULIC SYSTEM:
- Type . . . . . Closed center, constant pressure. Includes power steering, power brakes, and equipment control
- Maximum pressure . . . . . 2250 psi

BRAKES: . . . . . Hydraulically power actuated, disk-type, operating in oil

FRONT TIRES:** 9.00-15, 10-ply

REAR TIRES:** 18.00-26, 10-ply

FRONT WHEEL TREAD: . . . . . 64 in.

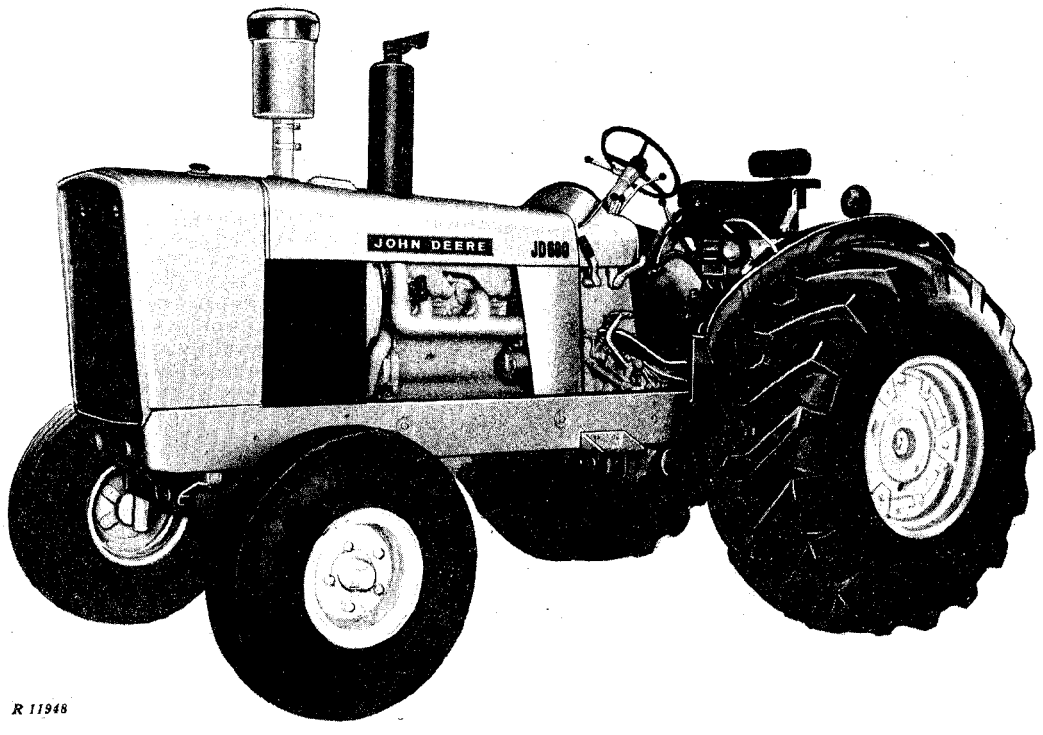
REAR WHEEL TREAD: . . . . . 70 in.
(For tread widths with other size tires, see page 63)

DIMENSIONS:
- Wheel base . . . . . 97 in.
- Over-all length . . . . . 149-1/2 in.
- Over-all height . . . . . 89 in.
- Width . . . . . 94 in.
- Turning radius . . . . . 163 in.

SHIPPING WEIGHT (Collar Shift Tractors equipped for average service, less fuel and ballast. Add 375 pounds if tractor has Power Shift transmission):
Diesel - 9185 lbs. Gasoline - 8895 lbs.

***Additional tire sizes available for special purposes.*

Specifications and design subject to change without notice.
Whenever applicable, specifications are in accordance with I.E.M.C. standards.



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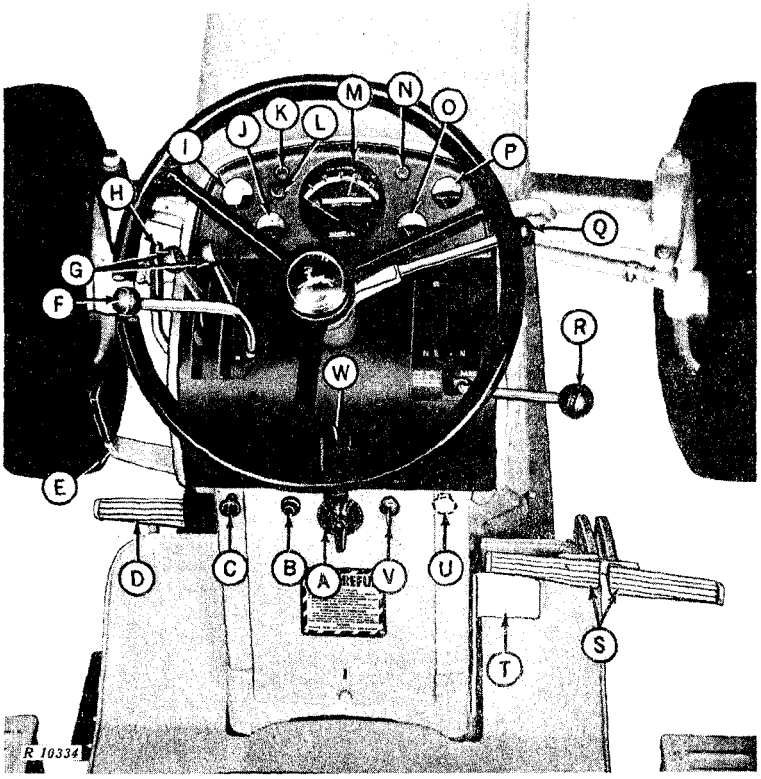
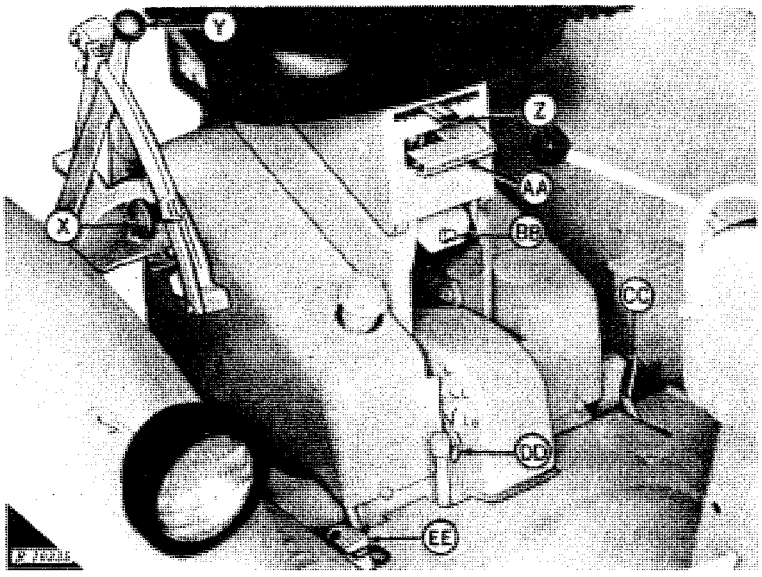
John Deere JD600 Tractor with Diesel Engine and Power Shift Transmission

CONTROLS AND INSTRUMENTS

For safe and efficient operation, first become familiar with the location and purpose of all controls and instruments. Study the next few pages carefully, regardless of your previous experience.





A – Light Switch (page 17)
B – Starter Switch (pages 5, 6, 9)
C – Latch Knob (Power Shift Tractors, page 7)
D – Inching Pedal (Power Shift Tractors, page 11)
Clutch Pedal (Collar Shift Tractors, page 13)
E – Power Take-Off Clutch Lever (page 28)
F – Reverser Lever (pages 11 and 13)
G – Remote Cylinder Operating Levers (page 18)
H – Engine Disconnect Lever (Power Shift Tractors, page 7)
I – Transmission Oil Pressure Gauge (Power Shift Tractors, page 12)
J – Coolant Temperature Gauge
K – Alternator Indicator Light (pages 5 and 6)
L – Speed Indicator Knob (page 11)
M – Speed-Hour Meter (pages 11 and 37)
N – Oil Pressure Indicator Light (pages 5 and 6)
O – Fuel Gauge
P – Transmission Oil Temperature Gauge (Power Shift Tractors, page 12)
Q – Hand Throttle (page 8)
R – Speed Selector (Power Shift Tractors, page 11)
Shift Lever (Collar Shift Tractors, page 13)
S – Brake Pedals (page 15)
T – Foot Throttle (page 9)
U – Engine Choke Knob (Gasoline Tractors, page 6)
V – Key Switch (pages 5, 6, and 9)
W – Ether Starting Fluid Adapter (Diesel Tractors, page 6)
X – Rockshaft Control Lever Depth Stop (page 21)
Y – Rockshaft Control Lever (page 21)
Z – Seat Position Selector Lever (page 10)
AA – Seat Latch Handle (page 10)
BB – Seat Weight Adjusting Screw (page 10)
CC – Tow Lever (Power Shift Tractors, page 14)
DD – Rockshaft Selector Lever (page 22)
EE – Differential Lock Pedal (page 13)

Tractor with Diesel Engine and Power Shift Transmission

OPERATION

Complete instructions for safe and efficient operation are given on the following pages. By following these directions carefully, you can be sure that you are taking full advantage of the time and labor-saving features built into all John Deere equipment.

OPERATING THE ENGINE

PRESTARTING CHECKS

Perform the following checks and services before starting the engine for the first time each day. For detailed instructions, see page 40, 41, and 42.

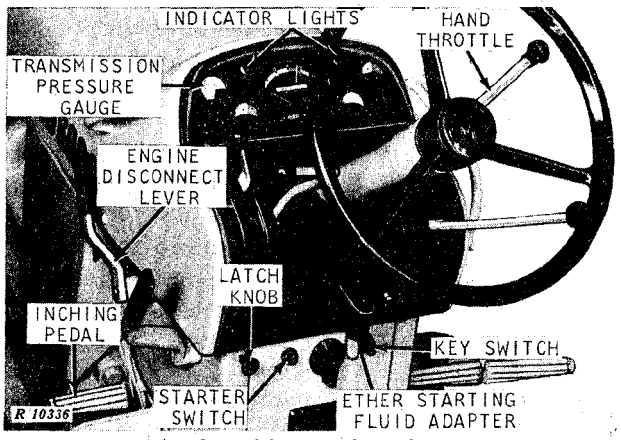
1. Check the engine crankcase oil level.
2. Check the radiator coolant level.
3. Check the air cleaner.
4. Check the fuel pump sediment bowl. See page 49. If the tractor has a precleaner, check the collector bowl.
5. Lubricate the front axle pivot pins, steering knuckle pins, steering bell crank, tie rod ends, and steering cylinder end fittings.
6. Grease the front wheel bearings if the tractor has been operated in extremely wet or muddy conditions.
7. Make sure the fuel shut-off valve on the bottom of the fuel tank is open.

STARTING THE DIESEL ENGINE

NOTE: If the prevailing temperature is 40° F. or lower, it may be necessary to use a cold weather starting aid to start the engine - see page 6. **Do not tow a Power Shift tractor to start the engine.**

Perform the Prestarting Checks above.

1. See that the shift lever or the speed selector is in the "PARK" position. Depress the clutch pedal or the inching pedal.
2. Place the hand throttle in the 1200 rpm position, approximately one-third of its travel down from the slow idle position.
3. Turn the key switch clockwise. Both indicator lights should glow. If either light fails to glow, turn off the key switch and determine the cause.
4. Press the starter switch to crank the engine. Do not hold the starter switch in for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait for a minute or two before trying again. If it does not start after four such attempts, refer to "Trouble Shooting" - page 66.



Diesel Starting Controls

If the starter switch is released before the engine starts, wait until the starter stops before pressing the switch again. This will prevent possible damage to the starter.

On tractors with a Collar Shift transmission, the shift lever must be in neutral, or on tractors with a Power Shift transmission, the inching pedal must be depressed and the speed selector in "PARK" before the starter will operate.

5. As the engine begins to run, check to see that the oil pressure indicator light and alternator indicator light go out. If either light continues to glow when the engine is running, stop the engine and determine the cause.

On tractors with Power Shift transmission, check to see that the transmission oil pressure gauge indicates oil pressure. Operating the engine when gauge shows insufficient pressure may damage the tractor. See pages 7 and 12.

STARTING THE GASOLINE ENGINE

Perform the Prestarting Checks on page 5.

1. See that the shift lever or the speed selector is in "PARK" position. Depress the clutch pedal or the inching pedal.

2. PLACE THE HAND THROTTLE IN THE 650 RPM POSITION, all the way up with the knob in.

3. When the prevailing temperature is below 60 degrees Fahrenheit and the engine is cold, pull out on the engine choke knob.

NOTE: At extremely low temperatures it may be necessary to use a cold weather starting aid (see next column). **Do not tow a Power Shift tractor to start the engine.**

4. Turn the key switch clockwise. The alternator and oil pressure indicator lights should glow. If either light fails to glow, turn the key switch off and determine the cause.

5. Press on the starter switch to start the engine. To prevent overheating the starter, do not operate starter for more than 30 seconds at a time and then wait a minute or two before trying again. If the engine does not start, momentarily pull the choke knob out while starting the engine. If it does not start after four such attempts, see "Trouble Shooting" (page 66).

If the starter switch is released before the engine starts, wait until the starter stops before pressing the switch again. This will prevent possible damage to the starter.

On Collar Shift tractors, the shift lever must be in neutral, or on Power Shift tractors, the inching pedal must be depressed and the speed selector in "PARK" before the starter will operate.

6. If the choke was used as recommended in Step 3 above, push the knob in as soon as the engine starts. During cold weather it may be necessary to leave the choke partially on for the first few minutes.

7. As the engine begins to run, check to see that the oil pressure and alternator indicator lights go out. If either light continues to glow when the engine is running, stop the engine and determine the cause.

On tractors with Power Shift transmission, check to see that the transmission oil pressure gauge indicates oil pressure. Operating the engine when gauge shows insufficient pressure may damage the tractor. See pages 7 and 12.

COLD WEATHER STARTING AIDS

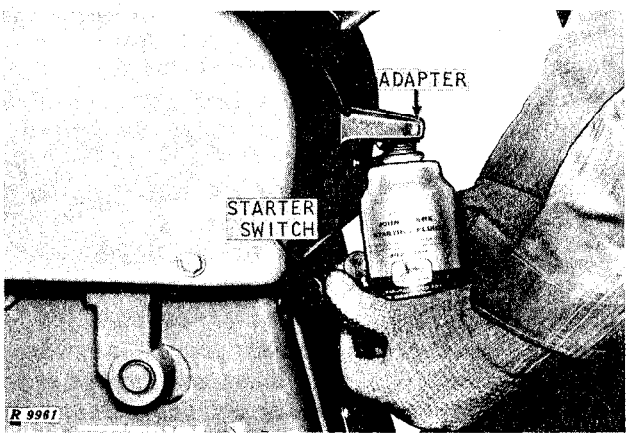
For cold weather starting, the diesel tractor is equipped with an ether starting fluid adapter. The Power Shift transmission tractor is equipped with an engine disconnect lever. Other starting aids are available from your John Deere dealer.

These aids are effective at low temperatures, only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge, crankcase oil of heavy viscosity, and high electrical resistance which may prevent the engine from starting.

ETHER STARTING FLUID ADAPTER (Diesel Tractors)

The diesel tractor is equipped with this adapter which is used to inject atomized starting fluid into the engine air intake system. Pressurized cans of starting fluid are available from your John Deere dealer.

To use the can of starting fluid, remove the safety cap and plastic spray button from the can. Remove the cap from the adapter and position the can under the adapter.



Injecting Starting Fluid

To inject starting fluid, push up on the can.

CAUTION: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

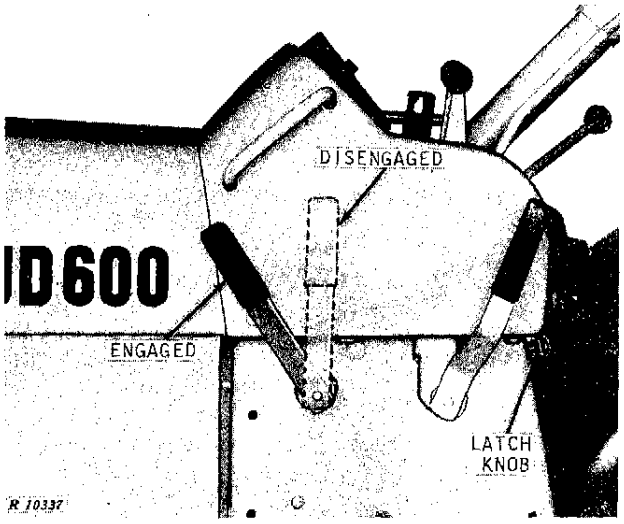
Relax pressure on the can between "shots" of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety cap on the can.

Be sure to install the cap on the adapter when it is not in use. This will prevent dust from being drawn into the engine.

Store starting fluid cans where they will not be subject to extreme cold or warm temperatures. For best results, store fluid at room temperature.

CAUTION: Ether starting fluid is highly flammable.

ENGINE DISCONNECT LEVER (Power Shift Tractors)



Engine Disconnect Lever

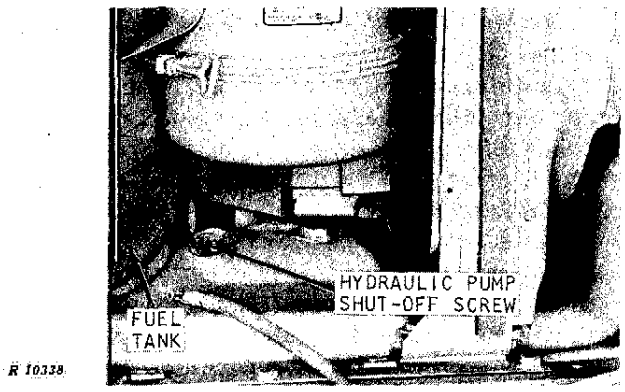
During cold weather, the starter speed on Power Shift tractors may be increased by disengaging the engine disconnect lever so that the transmission will not turn. To do so, pull the lever rearward until it is latched in the disengaged position.

IMMEDIATELY after starting the engine, engage the lever by pulling it slightly rearward while pulling out on the latch knob. Hold the knob out and allow the lever to move forward to the engaged position. Release the latch knob. The transmission oil pressure gauge should indicate oil pressure (pages 5 and 12).

CAUTION: Operating the engine with the engine disconnect lever disengaged will damage the tractor. Be sure to engage it as soon as the engine starts.

SHUTTING OFF HYDRAULIC PUMP

If the tractor has a hydraulic pump shut-off screw (available from your John Deere dealer), the starter speed may be increased during cold weather by shutting off the hydraulic pump so it will not build up pressure. To do so, turn the shut-off screw in (clockwise) one turn with a screwdriver. Then turn the screw in by hand until resistance is felt. Turn the screw in one more turn.



Hydraulic Pump Shut-Off Screw

After the engine has started, use a screwdriver to back the shut-off screw all the way out (turn the screw counter-clockwise). The pump will now build up pressure.

NOTE: Oil will leak past the shut-off screw if it is not backed all the way out against the internal stop.

CRANKCASE OIL HEATER

To facilitate cold weather starting, a 240-watt, 115-volt electrical crankcase oil heater may be installed in the engine oil pan at the lower front right-hand corner.

ADDITIONAL BATTERIES

Cold weather starting can be made easier by connecting an additional 12-volt battery in parallel with the 12-volt battery on the tractor.

CAUTION: Gas given off by batteries is explosive. To avoid injury or battery damage, avoid sparks near the batteries.

Make sure all electrical switches or accessories are turned off and make the last connection or the first disconnection at some point away from the battery.

On gasoline tractors, connect a jumper cable to the positive (+) post of a 12-volt booster battery and to the positive (+) post of the tractor battery. Connect one end of the other jumper cable to the negative (–) post of the booster battery and the other end to a good ground on the tractor frame away from the battery. NEVER connect jumper cable to pipes or thin sheet metal.

NOTE: On diesel tractors, the only battery ground connection is a light gauge ground wire. To prevent damage to the ground wire, never connect a booster battery to the diesel tractor frame.

On diesel tractors, use two 12-volt batteries and four jumper cables. Connect first jumper cable to the positive (+) post of the first booster battery and to the positive (+) post of the right-hand tractor battery. Connect the second jumper cable from the negative post of the second booster battery and to the negative post of the left-hand tractor battery. Connect one end of the third jumper cable to the negative post of the first booster battery. Connect one end of the fourth jumper cable to the positive (+) post of the second booster battery. To make the last connection away from the batteries, connect together the other ends of the third and fourth jumper cables.

See your John Deere dealer for additional booster battery information.

TRACTOR WARM-UP PERIOD

Always be sure the tractor is warmed up properly before operating under a full load.

A good way to do this is first to idle the engine at about 1500 rpm for 5 minutes and then operate it at about 1900 rpm for another 5 minutes.

It is good practice to operate the tractor for the first 30 minutes in a lower gear than is normally required for the load. This gives the oil a chance to circulate freely and prevents undue wear on engine or transmission parts.

ENGINE IDLING

Avoid unnecessary engine idling. Prolonged engine idling may cause the engine coolant temperature to fall below its normal range. This in turn causes crankcase oil dilution, due to incomplete fuel combustion, and permits formation of gummy deposits on valves, pistons, and piston rings. It also promotes rapid accumulation of engine sludge and unburned fuel in the exhaust system.

When the tractor is to remain idle for a considerable length of time, stop the engine.

ENGINE SPEEDS

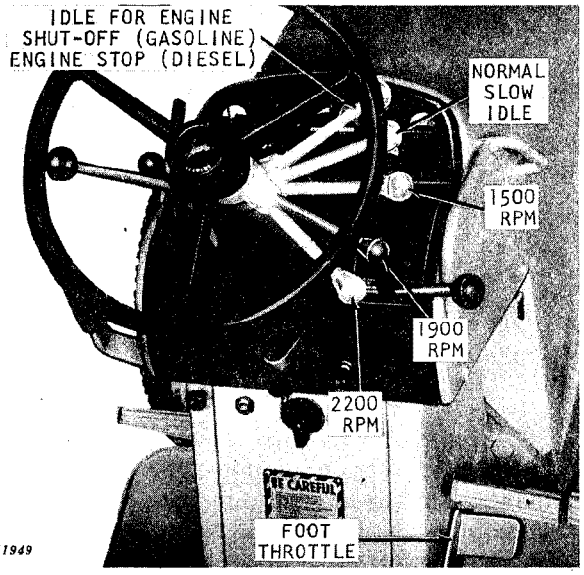
The tractor engine is designed to operate at working speeds ranging from 1500 to 2200 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 1900 rpm to obtain the SAE rated PTO speeds.

Normal slow idle is approximately 600 rpm. On a gasoline tractor, a 420 rpm idle speed is provided for engine shut-off.

In addition, engine speeds may be varied up to 2500 rpm to save you time when traveling on highways or on smooth-surfaced roads.

To check engine speeds, see page 46.

USING HAND THROTTLE



Range of Hand Throttle Positions

Use the hand throttle to select slow idle or any of the variable governed speeds from 1500 to 2200 rpm.

Push the throttle upward as far as it will go with the knob in to obtain the normal slow idle speed of approximately 600 rpm. To obtain the idle speed for engine shut-off on gasoline tractors, pull out on the knob on the hand throttle and push the throttle upward as far as it will go. To obtain the 1900 rpm load speed, pull the throttle downward to the first stop. Placing the throttle halfway between slow idle and 1900 rpm gives the 1500 rpm speed. Engine speeds between 1500 and 1900 rpm may be selected by moving the lever between these two positions.

To obtain working speeds above 1900 rpm, pull out on the knob at the end of the hand throttle. With the knob pulled out, pull the throttle downward as far as it will go. This is the 2200 rpm load speed position. Engine speeds between 1900 and 2200 rpm may be selected by moving the lever between these two positions.

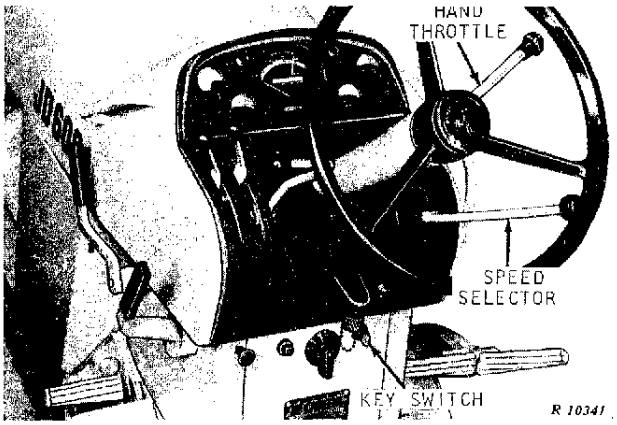
USING FOOT THROTTLE

The foot throttle is used to obtain engine transport speeds or to raise engine speed momentarily. When the foot throttle is pushed all the way downward, the engine operates at 2500 rpm load speed.

NOTE: The foot throttle should not be used to increase the normal engine working speed.

STOPPING THE ENGINE

Place the shift lever or speed selector in "PARK" and allow the engine to idle a few minutes. Sudden stopping of a hot engine may allow some parts to overheat momentarily and cause possible damage.



Stopping Controls

DIESEL ENGINES

Pull out on the hand throttle knob and push the throttle up into the engine stop position. Turn the key switch off.

GASOLINE ENGINES

Pull out on the hand throttle knob and push the throttle up into the idle position for engine shut-off. Stop the engine by turning the key switch off. If engine continues running after switch is off, be sure hand throttle is all the way up into the idle position for engine shut-off.

ALL ENGINES

After stopping the engine, remove the key from the switch to prevent tampering and unauthorized operation. Removing the key also prevents battery discharge in the event that the switch was accidently left in the on position.

BREAKING IN THE ENGINE

NOTE: If the coolant temperature rises above the "N" range, operate in a lower gear to reduce the load on the engine. Be sure to follow the special break-in lubrication instructions given on page 37.

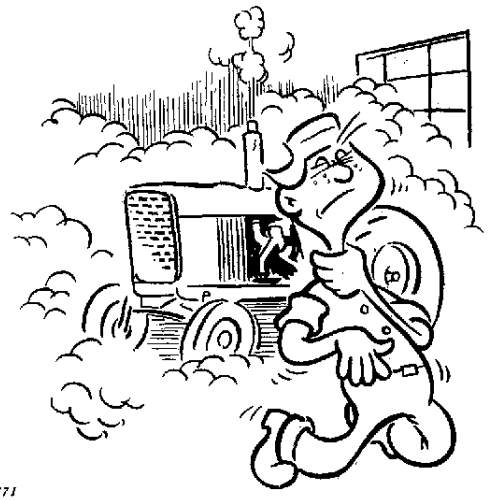
With the following exceptions, the engine is ready for normal operation.

DIESEL ENGINES

During the first 20 hours, using the foot throttle is not recommended. To facilitate break-in, avoid prolonged periods of engine idling, particularly for the first 100 hours of service.

GASOLINE ENGINES

During the first 20 hours of service, operate the gasoline engine at half load with the hand throttle in the 1900 rpm load speed position. At half load, the engine speed will be approximately 2100 rpm. Do not use the foot throttle during the break-in period.



CAUTION: Before starting the tractor engine, be sure there is plenty of ventilation. Never operate the tractor in a shed or garage.

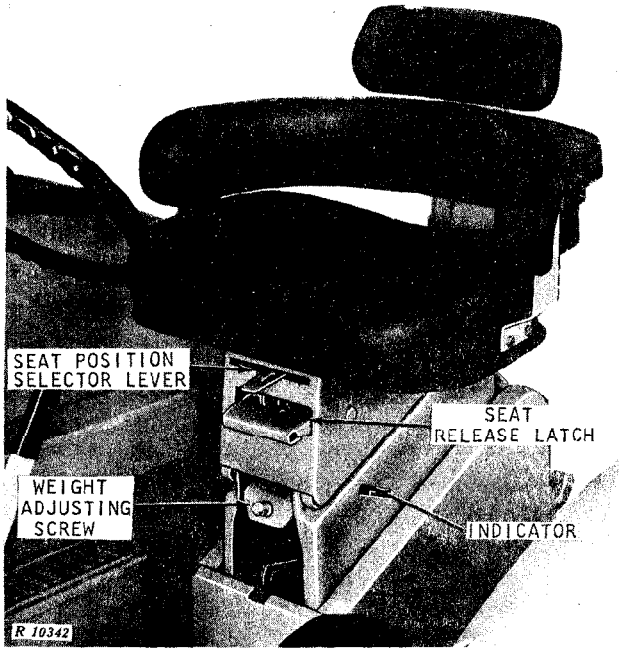
OPERATING THE TRACTOR

SEAT

The deluxe, foam-padded suspension seat contains a steel compression spring and shock absorber to provide "Float-Ride" comfort. The semi-circular lower backrest and flexibly mounted upper backrest add to the operator's comfort and safety.

Use only warm water and mild soap to clean the seat cushions. NEVER USE SOLVENTS.

MOVING SEAT TO UPPER REAR POSITION



Seat Controls

To move the seat up and back, stand up and lift the seat release latch. The seat will move automatically to the upper rear position. Sit down to return the seat to the normal, preset operating position.

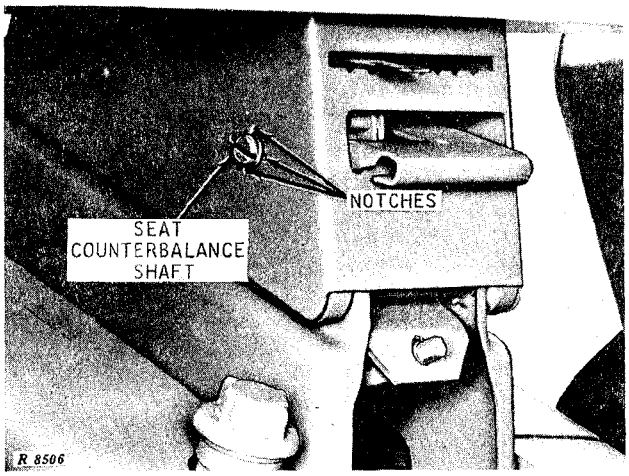
ADJUSTING FOR HEIGHT OF OPERATOR

The normal operating position of the seat can be suited to the height of the individual operator. To make this adjustment, first move the seat to the upper, rear position. Then shift the seat position selector lever between "short" and "tall" until the pedals and levers can be operated comfortably when you are seated. The seat will always return to this position when you sit down after having moved the seat up and to the rear for standing.

ADJUSTING FOR WEIGHT OF OPERATOR

You can adjust the tension of the steel compression spring to conform to your weight. This results in the proper amount of comfort and enables the seat to "float" when traveling over rough ground. To make this adjustment, turn the weight-adjusting screw clockwise or counter-clockwise until the indicator on the left-hand side of the seat conforms to your weight.

ADJUSTING COUNTERBALANCE SPRING



Seat Counterbalance Shaft

If the seat does not move fully to the rear when unlatched, adjust the counterbalance spring as follows. Move the seat to the upper rear position. Insert a screwdriver in the slot in the counterbalance shaft, push in to unlatch the shaft, and turn the shaft counter-clockwise. Align the latch in the end of the shaft with one of the pairs of slots in the side of the seat support and pull the screwdriver outward to latch the shaft.

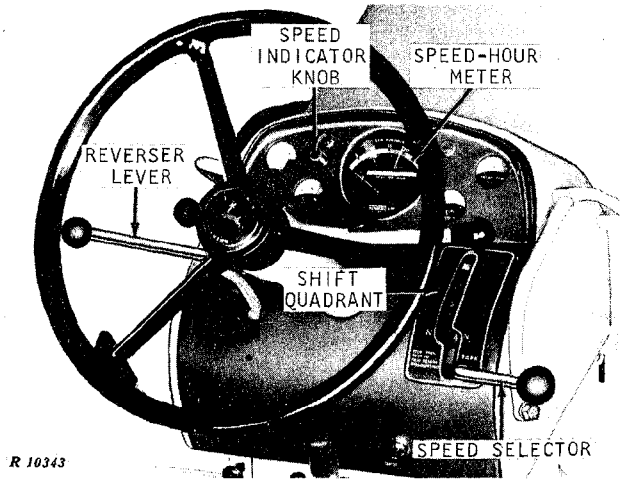
SELECTING GROUND SPEED

Both transmissions provide eight forward speeds for each of the throttle positions that may be used. The Collar Shift transmission has two reverse speeds, and the Power Shift transmission has four. These combinations enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions. For example, at a given ground speed the operator may choose to work in a low gear at high engine speed for maximum reserve power or in a higher gear at a lower engine speed for maximum fuel economy.

Examples of the ground speeds at which the tractor will travel are shown below. Engine working speeds may be varied between 1500 rpm and 2200 rpm, and engine transport speeds may be varied up to 2500 rpm. Tractor ground speeds shown in the chart are only for engine speeds of 1500, 1900, 2200, and 2500 rpm.

Turn the speed indicator knob on the instrument panel until the gear selected shows on the speed indicator. The speed-hour meter needle will now indicate the tractor ground speed in miles per hour.

Avoid overloading the tractor. When this occurs, operate in a lower gear. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair expense.



Speed Indicator Knob and Speed Selector

POWER SHIFT TRANSMISSION

SHIFTING

The Power Shift transmission can be shifted "on the go" or when the tractor is stopped by moving the speed selector or the reverser lever to the desired position. It is not necessary to use the inching pedal when starting out or when shifting.

To move the tractor forward, push the reverser lever into the forward position and move the speed selector to the desired gear. Progressive shifting (one gear at a time) will result in smoother speed change.

TRACTOR GROUND SPEED IN MILES PER HOUR

	Hand Throttle Operating Range						Maximum Foot Throttle Speed	
Gear	1500 rpm		1900 rpm		2200 rpm		2500 rpm	
	Collar Shift	Power Shift	Collar Shift	Power Shift	Collar Shift	Power Shift	Collar Shift	Power Shift
1st	1.2	1.1	1.5	1.4	1.7	1.7	2.0	1.9
2nd	1.9	1.6	2.4	2.0	2.8	2.3	3.2	2.7
3rd	2.5	2.5	3.2	3.1	3.7	3.6	4.2	4.1
4th	3.2	3.2	4.1	4.1	4.7	4.7	5.4	5.3
5th	4.0	4.1	5.1	5.2	5.9	6.1	6.7	6.9
6th	5.3	5.4	6.7	6.8	7.7	7.9	8.8	8.9
7th	6.8	7.1	8.6	9.0	10.0	10.4	11.3	11.8
8th	11.1	11.8	14.1	14.9	16.3	17.3	18.5	19.7
1st reverse	2.4	1.3	3.1	1.7	...	...	...	...
2nd reverse	3.9	1.9	4.9	2.4	...	...	...	...
3rd reverse	...	2.9	...	3.7	...	...	...	...
4th reverse	...	3.7	...	4.7	...	...	...	...

**1900 engine rpm gives the SAE rated 540 or 1000 rpm PTO speed. Some PTO-driven equipment is operated at other speeds. See the equipment operator's manual for detailed instructions.*

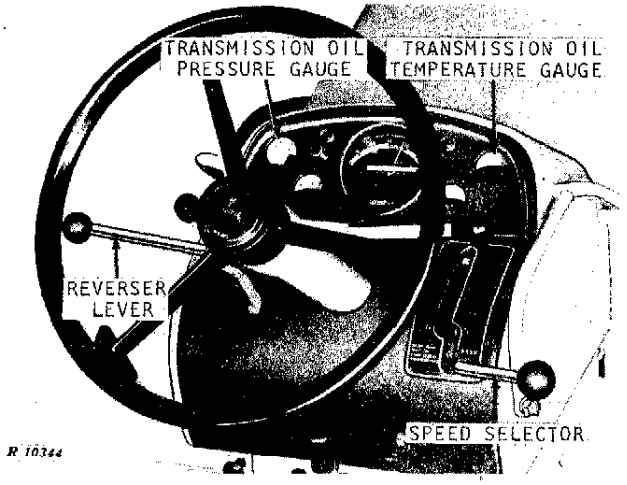
NOTE: The ground speeds shown in this chart are for a tractor equipped with 18.00-26 rear tires with a loaded radius of 27.4 inches.

To reverse the tractor when operating in one of the first four gears, pull the reverser lever rearward to the reverse "R" position. When the speed selector is in 5th gear or higher, the reverser lever can not be put in the reverse position.

Reduce engine speed prior to making sudden extreme speed changes. A hand rail beside the speed selector may be used as an aid to shifting when traveling over rough ground.

Use the inching pedal when making emergency stops, when hitching to equipment, or whenever slower clutch engagement is required.

OPERATION



Transmission Instruments

When operating a tractor with a Power Shift transmission check the transmission oil pressure gauge and the transmission oil temperature gauge for satisfactory transmission operation.

If the indicator hand on the temperature gauge goes into the red zone, stop the tractor and clean all dirt and trash from the grille screens and the transmission-hydraulic oil cooler core. See page 56. Also check for proper transmission-hydraulic oil level. If necessary fill the system to the proper level. See page 43. If this does not correct the difficulty, call your John Deere dealer. Do not operate the tractor when the temperature indicator hand is in the red zone.

When operating the engine at 2200 rpm, the indicator hand on the transmission oil pressure gauge should be to the right of the minimum transmission pressure line.

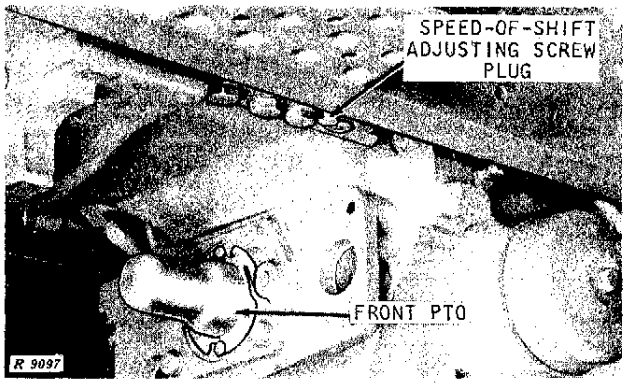
The minimum, safe transmission oil pressure will decrease in proportion to engine speed below 2200 rpm. If the pressure is questionable, check it by momentarily running the engine at 2200 rpm.

If the gauge indicates low oil pressure, stop the tractor and check the transmission oil level (see page 43). If the oil level is in the "SAFE" range, the transmission-hydraulic system filters may be clogged and need replacing. See page 45. If this does not correct the difficulty, call your John Deere dealer.

CAUTION: Do not operate the tractor when the transmission oil temperature is too high or the oil pressure is too low.

SHIFT ADJUSTMENT

The transmission speed-of-shift may be adjusted for a rapid shift or for a slow, smoother shift. When pulling a heavy load, rapid shifts are desirable to prevent the tractor from stopping while shifting. When pulling a light load, adjust for a slow smooth shift.



Speed-of-Shift Adjusting Screw Plug

To adjust the speed-of-shift, stop the engine and remove the adjusting screw plug at the bottom of the valve housing on the left-hand side of the tractor. With a screwdriver, turn the adjusting screw in (clockwise) to slow down the shifting. To speed up the shifting for heavy loads, turn the adjusting screw out. Turn the adjusting screw one-half turn at a time until the desired speed-of-shift is obtained.

Install the adjusting screw plug to prevent oil leakage.

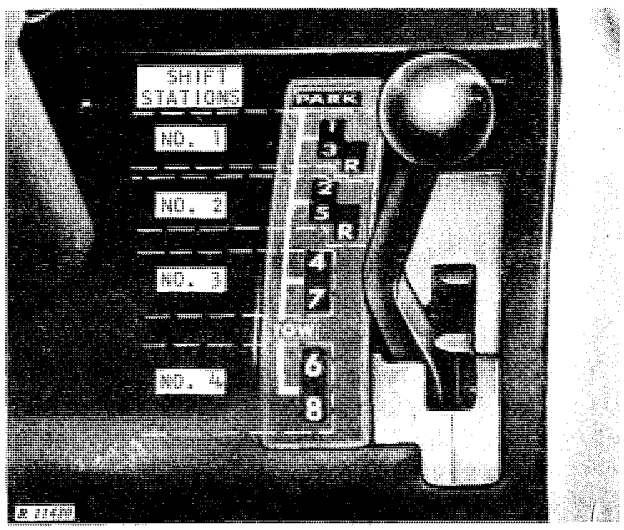
COLLAR SHIFT TRANSMISSION

SHIFTING BETWEEN STATIONS

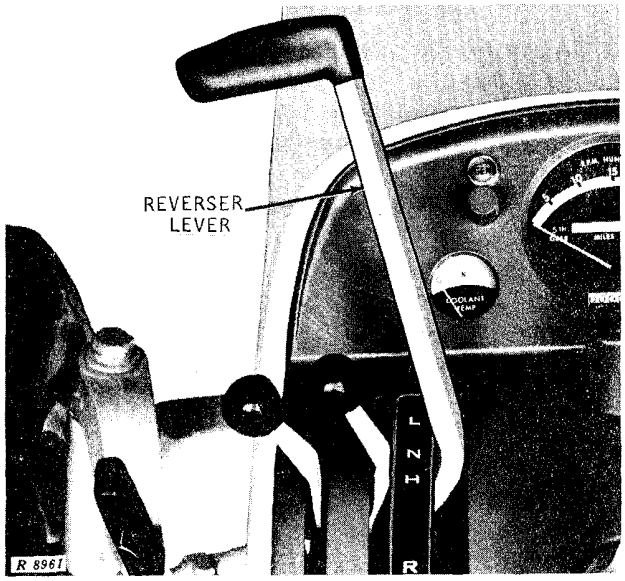
The shift quadrant has four shift stations. Stations No. 1 and 2 have two forward speeds and one reverse speed. Stations No. 3 and 4 have two forward speeds only.

With the tractor stopped and the clutch pedal depressed, move the shift lever to a neutral position at the left side of the quadrant. Then move the shift lever to the station that has the desired speed. Move the lever to the right and into the speed desired.

Gradually release the clutch pedal to take up the load smoothly.



Collar Shift Transmission Shift Lever in TOW Position



Reverser Lever in Neutral

SHIFTING WITHIN STATIONS

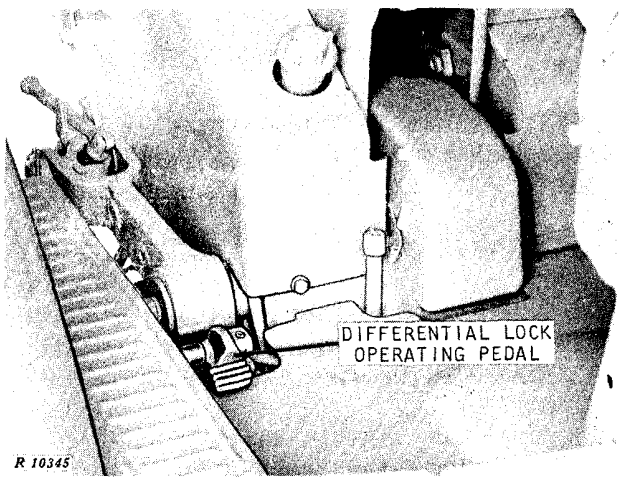
With the clutch pedal depressed and the tractor stopped, the transmission can be shifted with either the reverser lever or the shift lever from one forward speed to the other forward speed within the same station (1st and 3rd, 2nd and 5th, 4th and 7th, or 6th and 8th).

In stations No. 1 and 2, you can also shift from the highest forward speed to the reverse speed within the same station.

Gradually release the clutch pedal to engage the clutch.

DIFFERENTIAL LOCK

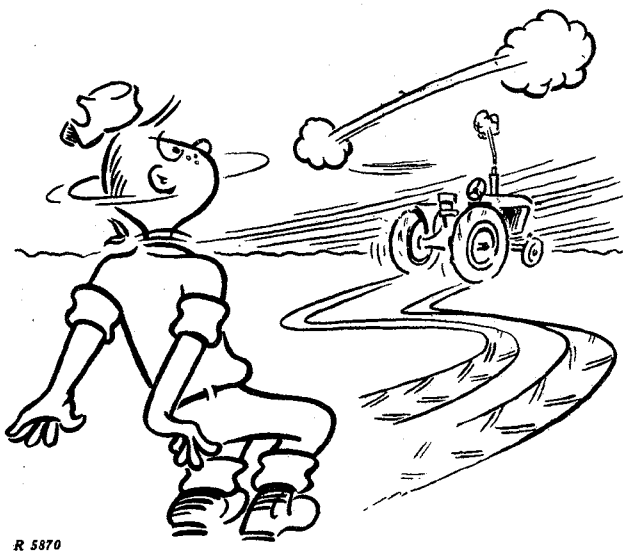
Your tractor may be equipped with a differential lock that will permit both rear wheels to turn at the same speed. This prevents the usual loss of traction when one wheel is slipping.



Differential Lock Operating Pedal

When one wheel starts to slip or whenever desired, engage the differential lock by depressing the operating pedal located at the right-rear side of the platform. When no longer required and before turning the tractor, disengage the differential lock by depressing one or both brake pedals. The front wheels should be in the straight ahead position when disengaging the differential lock.

CAUTION: Do not operate the tractor at high speeds or attempt to turn the tractor with the differential lock engaged.



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CAUTION: Whenever the tractor is stopped, place the shift lever or speed selector in the "PARK" position BEFORE DISMOUNTING. Never dismount from the tractor when it is in motion.

PARKING THE TRACTOR

CAUTION: Be sure the tractor is stopped before placing the shift lever or speed selector in the "PARK" position.

COLLAR SHIFT TRACTORS

On Collar Shift tractors, move the shift lever to a neutral position at the left side of the quadrant. Then push the shift lever all the way forward into "PARK."

To shift from "PARK," move the shift lever rearward to the station desired. When the tractor is parked on a steep incline, it may be necessary to do the following to relieve the load on the transmission park lock. Depress the clutch pedal and pull the shift lever rearward against spring pressure into the No. 1 shift station. Then shift into a forward or reverse gear that will move the tractor UP THE INCLINE. VERY SLOWLY engage the clutch and the transmission will shift out of "PARK."

POWER SHIFT TRACTORS

On Power Shift tractors, move the speed selector rearward and to the right into the "PARK" position shown in the illustration on page 12.

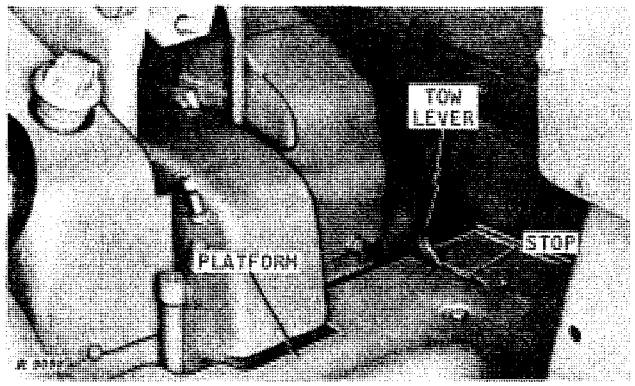
Shifting from "PARK" to neutral releases the park locking action.

TOWING THE TRACTOR

CAUTION: Never tow the tractor at high speeds. Always attach a tow bar or chain to the tractor frame. When possible, run the engine to maintain hydraulic pressure for power operation of steering and brakes.

POWER SHIFT TRACTORS

When towing the tractor with a Power Shift transmission, move the tow lever forward around the stop until it locks in the "TOW" position. Place the speed selector in the neutral "N" position.



Tow Lever on Power Shift Tractor

When moving the lever out of the "TOW" position to operate the tractor, place the speed selector in "PARK" and move the tow lever rearward, around the stop until the lever locks in the rearward position. If tow lever will not move all the way rearward, start the engine while applying pressure rearward to the lever.

CAUTION: To prevent transmission damage, always place the tow lever in "TOW" position when towing Power Shift tractors. Do not tow the tractor to start the engine.

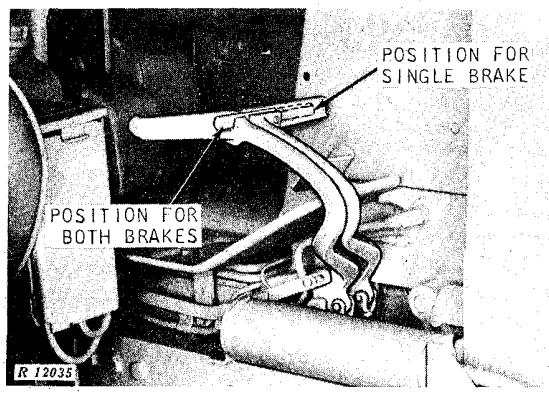
COLLAR SHIFT TRACTORS

The shift quadrant for the Collar Shift transmission has a "TOW" position. Whenever the Collar Shift tractor is to be towed, move the shift lever to this position.

POWER STEERING AND BRAKES

The tractor is equipped with full hydraulic power steering and power brakes so that a minimum of effort will operate the tractor.

To assist in making sharp turns, apply the brakes individually or, to stop the tractor, apply both brakes simultaneously. When traveling at high speeds, couple the pedals together as shown and use a light pressure on the pedals.



Brake Pedals Coupled Together

TIRES

TIRE INFLATION CHART

FRONT TIRES			
		Inflation Pressure	
Tire Size	Ply	With Towed or Rear-Mounted Equipment	With Front-Mounted Equipment
9.00-15*	12	45 lbs.	80 lbs.
10.00-15*	12	40 lbs.	75 lbs.
14-17.5*	10	20 lbs.	45 lbs.

**Truck type*

REAR TIRES			
		Inflation Pressure	
Tire Size	Ply	With Little or No Added Ballast	With Max. Ballast or Heavy Rear-Mounted Equipment
18.4-30	6	16 lbs.	16 lbs.
18.00-26	10	20 lbs.	20 lbs.

Properly inflated tires are important to the operation of your tractor. The amount of air pressure to be carried in the front and rear tires depends upon the equipment used with the tractor and the amount of ballast employed.

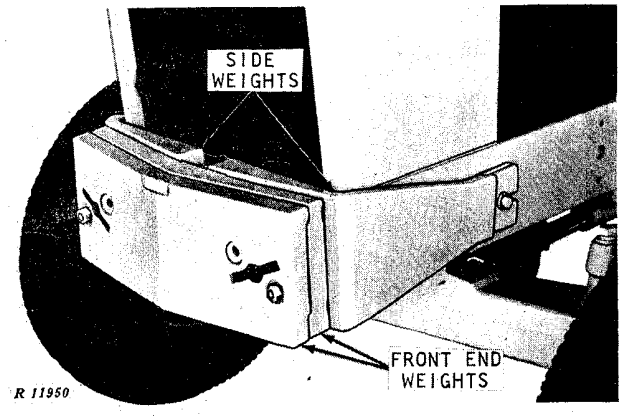
Keep the tires inflated according to the recommendations shown in the chart. Under-inflated tires break and wear out rapidly. Over-inflated tires reduce traction and increase wheel slippage.

BALLAST

The performance of your tractor can be improved under certain conditions by adding or reducing the ballast at the rear end or at the front end.

FRONT END AND SIDE WEIGHTS

When operating with heavy rear-mounted equipment or when operating on hilly terrain, install front end and side weights for adequate steering control and stability.



Front End and Side Weight Installed

Two side weights, and up to eight front end weights may be added. Each of the weights, available from your John Deere dealer, weighs 85 pounds.

The side weights are installed first. The front end weights stack on the front portions of the two side weights. Rotate each weight 180 degrees with respect to the preceding weight to line up the mounting holes.

Front end ballast cannot always maintain the required stability if the tractor is driven too fast over rough ground with reavy rear-mounted equipment in the raised position. Play safe and drive slowly under these conditions.

REAR WHEEL WEIGHTS

Power can be wasted and tire life cut drastically by excessive rear wheel slippage. Wheel slippage can be reduced to a minimum by weighting the rear wheels with a liquid solution in the tires or with cast-iron wheel weights.

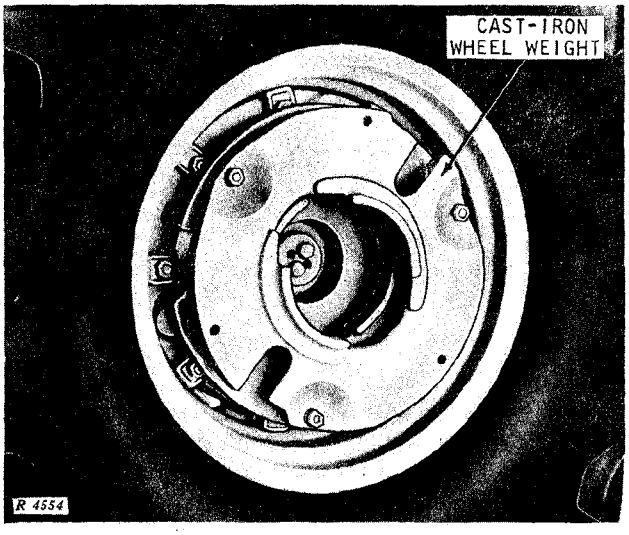
When the tractor is pulling its rated load, ballast should not be added to the point where all wheel slippage is eliminated.

Maximum Ballast

Added ballast should never exceed that required to provide traction within the 3rd gear operating capacity of the tractor, nor should tire carrying capacity be exceeded.

A total of 1800 pounds of ballast can be added with safety to each rear wheel when using towed equipment or 1000 pounds when using 3-point hitch equipment. When using integral equipment, see the equipment operator's manual for the correct rear wheel ballast. Be sure to adjust the tire pressures when maximum ballast is used (page 15).

Cast-Iron Weights



Cast-Iron Weights

Cast-iron weights should be bolted to the rear wheels of your tractor when weight is required in addition to or in place of liquid weight.

The removable weights are available from your John Deere dealer in two sizes—120 pounds and 140 pounds. Both types can be stacked on any one wheel. The small weights are required next to the wheel until large weights can be installed without interference.

Liquid Weight

Water and calcium chloride solution is an economical means of adding weight to the rear wheels. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighting the rear wheels has the full approval of the tire companies. See your John Deere dealer for this service. The following chart lists the liquid weight each tire will hold when 75 percent full (filled to valve level).

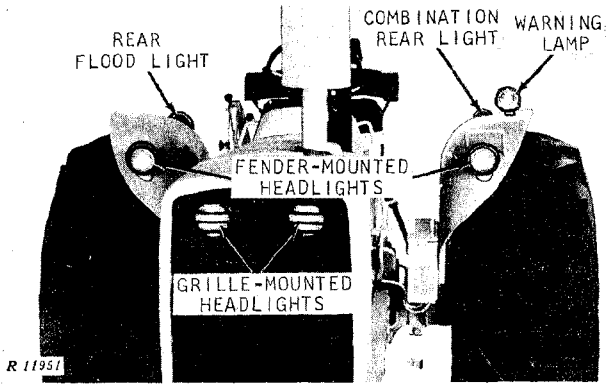
LIQUID WEIGHT PER TIRE (75 PERCENT FILLED)

Tire Size	Slush-Free at 13°F.; Solid at -23°F. (Approx. 2 Lbs. CaCl2 Per Gal. Water)	Slush-Free at -12°F.; Solid at -52°F. (Approx. 3.5 Lbs. CaCl2 Per Gal. Water)	Slush-Free at -53°F.; Solid at -62°F. (Approx. 5 Lbs. CaCl2 Per Gal. Water)
18.4 -30	800 lbs.	859 lbs.	905 lbs.
18.00-26	1205 lbs.*	1290 lbs.*	1366 lbs.*

**See maximum ballast with 3-point hitch equipment.*

LIGHTS

The lights on your tractor are designed to give the maximum amount of safety and convenience when operating at night or during other periods of low visibility.



Tractor Lights

Your tractor is equipped with the following lights: four sealed beam headlights (two on the fender and two in the grille), a combination red-white taillight on the left rear fender, a flood light on the right rear fender, a dash lamp, and, on tractors serial No. 119000 and after, a flashing warning light. The warning light (which is amber to the front and red to the rear) can be wired to burn continuously when the light switch

Suggest:

If the above button click is invalid.

Please download this document

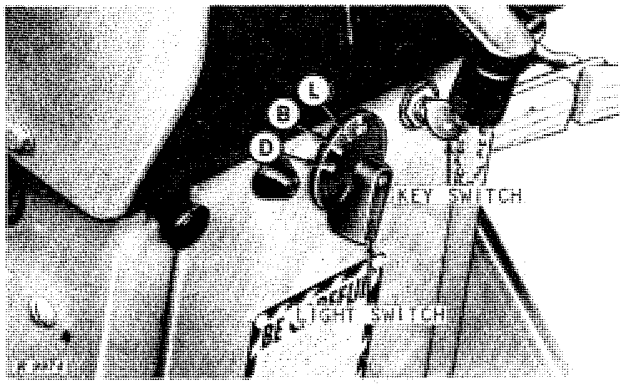
first, and then click the above link

to download the complete manual.

Thank you so much for reading

is in the "B" and "D" positions if flashing lights are prohibited by local regulations. See page 61.

LIGHT SWITCH



Light Switch

When the key switch is turned clockwise to the "ON" position, the light switch will turn on all tractor lights. The light switch has four positions.

"OFF" - To turn off all lights.

"L" - To turn on all headlights, white taillight, and right-rear floodlight.

"B" - To turn on all headlights and red taillight.

"D" - To turn on the fender-mounted headlights and red taillight.

When tractor is equipped with a flashing warning light, the light will be turned on in the "B" and "D" switch positions.

The dash light is turned on when the light switch is placed in any of the three operating positions.

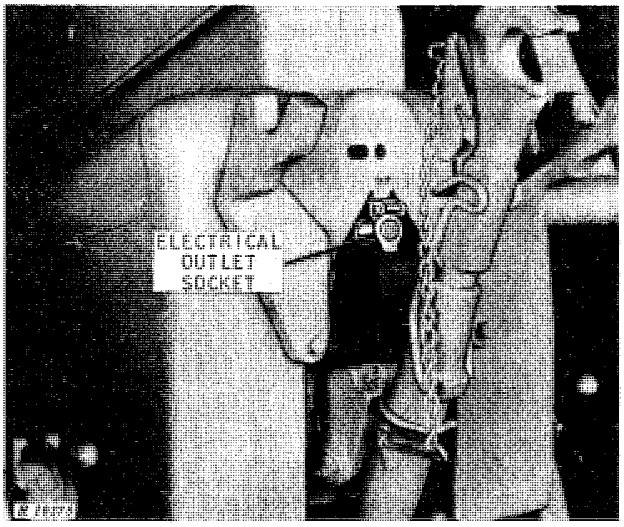
Always dim the tractor headlights when meeting a vehicle at night by turning the light switch to "D."

ADJUSTING THE HEADLIGHTS

The headlights on your tractor should be adjusted to illuminate the desired working area at the front and sides of the tractor.

When driving on the highway at night, readjust the headlights sufficiently downward so they will not blind the driver of an oncoming vehicle.

ELECTRICAL OUTLET SOCKET



Electrical Outlet Socket

This socket, a source of 12-volt, DC electrical power, is used for plugging in the equipment warning light, auxiliary lights, or other electrical equipment. It is located conveniently at the rear of the tractor.

If accessories drawing more than 3 amperes are plugged into the electrical outlet socket of a diesel tractor, see instructions on page 58 for balancing battery loads.

TRACTOR AND EQUIPMENT WARNING LIGHT

This light (which is amber to the front and red to the rear) is mounted on a bracket that may be bolted to the towed equipment. The light is connected to the electrical outlet socket and is lighted as long as it is connected.

When desired, the light may be equipped with a flasher, available from your John Deere dealer.

The light (which is easily detachable from the bracket on the equipment) can be used as a tractor warning light attached to a bracket on the left fender of tractors prior to serial No. 119000.

HIGHWAY DRIVING

When transporting (or driving) the tractor on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available at your John Deere dealer's.